

ETSI TS 131 103 V14.2.0 (2017-07)



**Digital cellular telecommunications system (Phase 2+) (GSM);
Universal Mobile Telecommunications System (UMTS);
LTE;
Characteristics of the
IP Multimedia Services Identity Module (ISIM) application
(3GPP TS 31.103 version 14.2.0 Release 14)**



Reference

RTS/TSGC-0631103ve20

Keywords

GSM,LTE,UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:
<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.
Information on the current status of this and other ETSI documents is available at
<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:
<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.
The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2017.
All rights reserved.

DECT™, PLUGTESTS™, UMTS™ and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.
3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and
of the 3GPP Organizational Partners.
oneM2M logo is protected for the benefit of its Members.
GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under
<http://webapp.etsi.org/key/queryform.asp>.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are NOT allowed in ETSI deliverables except when used in direct citation.

Contents

Intellectual Property Rights	2
Foreword.....	2
Modal verbs terminology.....	2
Foreword.....	5
Introduction	5
1 Scope	6
2 References	6
3 Definitions, symbols, abbreviations and coding conventions	8
3.1 Definitions	8
3.2 Symbols.....	8
3.3 Abbreviations	8
3.4 Coding Conventions	9
4 Files	9
4.1 Contents of the EFs at the MF level	10
4.2 Contents of files at the ISIM ADF (Application DF) level	10
4.2.1 Void	10
4.2.2 EFIMPI (IMS private user identity).....	10
4.2.3 EFDOMAIN (Home Network Domain Name)	11
4.2.4 EFIMPU (IMS public user identity).....	11
4.2.5 EFAD (Administrative Data).....	12
4.2.6 EFARR (Access Rule Reference).....	13
4.2.7 EFIST (ISIM Service Table).....	14
4.2.8 EFP-CSCF (P-CSCF Address)	15
4.2.9 EFGBACP (GBA Bootstrapping parameters)	16
4.2.10 EFGBANL (GBA NAF List).....	17
4.2.11 EFNAFKCA (NAF Key Centre Address)	18
4.2.12 EFSMS (Short messages)	18
4.2.13 EFSMSS (SMS status)	20
4.2.14 EFSMSR (Short message status reports).....	20
4.2.15 EFSMSP (Short message service parameters).....	21
4.2.16 EFUICCIARI (UICC IARI).....	22
4.2.17 EFFromPreferred (From Preferred)	23
4.2.18 EFIMSCConfigData (IMS Configuration Data)	23
4.2.19 EFXCAPConfigData (XCAP Configuration Data).....	25
4.3 ISIM file structure	28
4.4 Contents of EFs at the TELECOM level	29
4.4.1 EFPSISMSC (Public Service Identity of the SM-SC)	29
4.5 Contents of DFs at the TELECOM level.....	29
4.5.1 Contents of files at the DF _{MCPTT} level.....	29
5 Application protocol.....	29
5.1 ISIM management procedures.....	29
5.1.1 Initialisation	29
5.1.1.1 ISIM application selection	29
5.1.1.2 ISIM initialisation	30
5.1.2 ISIM Session termination	30
5.1.3 ISIM application closure.....	30
5.1.4 UICC presence detection	30
5.1.5 Administrative information request	30
5.2 ISIM security related procedures.....	31
5.2.1 Authentication procedure.....	31
5.2.2 IMPI request	31
5.2.3 IMPU request.....	31

5.2.4	SIP Domain request	31
5.2.5	Void	31
5.2.6	ISIM Service Table request	31
5.2.7	P-CSCF address request.....	31
5.2.8	Generic Bootstrapping architecture (Bootstrap)	31
5.2.9	Generic Bootstrapping architecture (NAF Derivation).....	31
5.2.10	HTTP-Digest security request.....	31
5.2.11	NAF Key Centre Address request.....	32
5.3	Subscription related procedures	32
5.3.1	SM-over-IP	32
5.3.2	Communication Control for IMS by ISIM	32
5.3.3	UICC access to IMS	32
5.3.4	From Preferred related procedures.....	32
5.3.5	IMS Configuration Data related procedures	32
5.3.6	XCAP Configuration Data related procedures.....	32
5.4	MCPTT related procedures	33
6	Security features	33
6.1	User verification and file access conditions	33
7	ISIM Commands	33
7.1	AUTHENTICATE	33
7.1.1	Command description	33
7.1.1.1	IMS AKA security context.....	34
7.1.1.2	GBA security context (Bootstrapping Mode)	34
7.1.1.3	GBA security context (NAF Derivation Mode)	35
7.1.1.4	HTTP-Digest security context.....	35
7.1.1.5	Local Key Establishment security context (Key Derivation mode)	35
7.1.1.6	Local Key Establishment security context (Key Availability Check mode)	36
7.1.2	Command parameters and data.....	37
7.1.2.1	IMS AKA security context.....	38
7.1.2.2	HTTP Digest security context.....	39
7.1.2.3	GBA security context (Bootstrapping Mode)	39
7.1.2.4	GBA security context (NAF Derivation Mode)	40
7.1.2.5	Local Key Establishment security context (All Modes).....	40
7.1.2.5.1	Local Key Establishment security context (Key Derivation mode).....	40
7.1.2.5.2	Local Key Establishment security context (Key Availability Check mode)	42
7.1.3	Status Conditions Returned by the ISIM	43
7.1.3.1	Security management	43
7.1.3.2	Status Words of the Commands	43
7.2	GET CHALLENGE	44
8	Void.....	44
Annex A (informative):	EF changes via Data Download or USAT applications	45
Annex B (informative):	Tags defined in 31.103	46
Annex C (informative):	Suggested contents of the EFs at pre-personalization	47
Annex D (informative):	List of SFI Values.....	48
D.1	List of SFI Values at the ISIM ADF Level	48
Annex E (informative):	ISIM Application Session Activation / Termination.....	49
Annex F (informative):	Change History	50
History	53	

Foreword

This Technical Specification (TS) has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document defines the IM Services Identity Module (ISIM) application. This application resides on the UICC, an IC card specified in TS 31.101 [3]. In particular, TS 31.101 [3] specifies the application independent properties of the UICC/terminal interface such as the physical characteristics and the logical structure.

TS 31.101 [3] is one of the core documents for this specification and is therefore referenced in many places in the present document.

1 Scope

The present document defines the ISIM application for access to IMS services.

The present document specifies:

- specific command parameters;
- file structures;
- contents of EFs (Elementary Files);
- security functions;
- application protocol to be used on the interface between UICC (ISIM) and Terminal.

This is to ensure interoperability between an ISIM and Terminal independently of the respective manufacturer, card issuer or operator.

The present document does not define any aspects related to the administrative management phase of the ISIM. Any internal technical realisation of either the ISIM or the Terminal is only specified where these are reflected over the interface. The present document does not specify any of the security algorithms that may be used.

2 References

The following documents contain provisions that, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication and/or edition number or version number) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

- [1] 3GPP TS 21.111: "USIM and IC Card Requirements".
- [2] 3GPP TS 31.102: "Characteristics of the USIM Application".
- [3] 3GPP TS 31.101: "UICC-Terminal Interface, Physical and Logical Characteristics".
- [4] 3GPP TS 33.102: "3G Security; Security Architecture".
- [5] 3GPP TS 33.103: "3G Security; Integration Guidelines".
- [6] ISO/IEC 7816-4: "Identification cards - Integrated circuit cards,Part 4: Organization, security and commands for interchange".
- [7] Void.
- [8] Void.
- [9] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [10] Void.
- [11] Void.
- [12] 3GPP TS 25.101: "UE Radio Transmission and Reception (FDD)".
- [13] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".